

WHAT IS CLAIMED IS:

1 1. A radio data communication system including a router and LAN (Local Area
2 Network) switch connected to an IP (Internet Protocol) network, said radio data communication
3 system comprising:

4 a private base station transceiver subsystem for exchanging data with a mobile terminal;

5 a private IP exchange for performing switching between mobile terminals;

6 a call manager for managing a call; and

7 a private base station controller for providing a mobile subscriber with a complete path and
8 assigning a vocoder in response to a request for an incoming or outgoing call to process the incoming
9 or outgoing call, the private base station controller comprising:

10 a high capacity IPC (Inter-Processor Communication) node board assembly; and

11 an Internet interface connected between the high capacity IPC node board assembly
12 and a LAN cable, wherein the Internet interface communicates with the private base station
13 transceiver subsystem under the control of the call manager, transmits packet data received
14 from the mobile terminal to the IP network, monitors installation or uninstallation and
15 functional errors of the private IP exchange, and transmits monitoring results to a wire
16 system manager in the call manager through an Ethernet port.

1 2. The radio data communication system as claimed in claim 1, wherein the Internet
2 interface comprises:

3 an alarm event checker for checking functional errors of various events and storing the
4 corresponding information;

5 a link address state checker for checking a link address state value of each board and storing
6 the corresponding information;

7 a flash memory for storing operating and control program data according to a radio data
8 service and an alarm function;

9 a static memory for storing various statistical data;

10 a dynamic memory for temporarily storing the program data of the flash memory and
11 corresponding operation data;

12 a U-link interface connected to the high capacity IPC node board assembly, for interfacing
13 a U-link;

14 an Ethernet interface connected to the LAN switch, for interfacing the Ethernet port; and

15 a controller for reading values of the alarm event checker and the link address state checker,
16 transmitting the read values to the call manager through the Ethernet interface and the LAN switch,
17 reading the control program data for radio data transmission, stored in the call manager, storing the
18 read control program data in the flash memory, transferring the control program data to a working
19 memory area, processing the control program data when there is data to be transmitted to the mobile
20 terminal through the U-link interface, and transmitting the processed data to the IP network through
21 the Ethernet interface and the LAN switch.

1 3. A method for communicating radio data in a radio data communication system
2 including a router and LAN (Local Area Network) switch connected to an IP (Internet Protocol)
3 network, a private base station transceiver subsystem for exchanging data with a mobile terminal,
4 and a private IP exchange for performing switching between mobile terminals, a call manager for
5 managing a call, and a private base station controller for providing a mobile subscriber with a

complete path and assigning a vocoder in response to a request for an incoming or outgoing call to process the incoming or outgoing call, the method comprising the steps of:

performing off-line booting by a booting ROM (Read Only Memory) in an Internet interface included in the private base station controller;

setting a medium access control and IP address, downloading a program from the call manager and storing the downloaded program in a first memory;

on-line booting an on-line package stored in the first memory to a second memory; and

informing the IP network that the call manager is on-line booted, and transmitting the radio data of the mobile terminal, received by the on-line package.